HARPER'S WEEKLY

SATURDAY
FEBRUARY 21
1903

Edited by GEORGE HARVEY

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The President and General Wood at the White House

The Inauguration of President Humphreys of Stevens Institute

American Wireless Telegraphy

New 'Round-the-World Time-Table

GEORGE WASHINGTON
From a hitherto unpublished Painting made from Life in 1799

Sixteen Pages of Comment on Politics, Literature, and Life

HARPER & BROTHERS NEW YORK

HARPERS BOOK NEWS

THE PRIDE OF TELLFAIR

Elmore Elliott Peake, by his new novel, "The Pride of Tellfair," published yesterday, bids fair to outdo the success which was attained by his first book, "The Darlingtons." The business, the pleasures, and the ambitions of a thriving lawyer form a background for a love story told in a way wholly novel. The life of a middle Western town is pictured with photographic fidelity, and the characters introduced are real, convincing, alive—the people one meets to-day in prosperous towns. The book entertains in every line.

THE MYSTERY OF SLEEP

A new edition of "The Mystery of Sleep" also made its appearance yesterday, so thoroughly revised and rewritten as to be practically a new book. Mr. John Bigelow, the author, has put into his work a lifetime of thought and experience; it is his theory that during sleep there is a return of the soul to its source, and that this, and not the mere physical regeneration of man, is the true, final function of sleep. Mr. Bigelow puts his views ably and earnestly, and with a logic that is convincing in its appeal.

THE NEW BOY AT DALE

Another new book published yesterday is "The New Boy at Dale," by Charles Edward Rich. This is a story for boys, dealing with the many adventures that befall the "new boy" at Dale school. The story is full of incident, and the spirit of adventure breathes through it all with strong appeal to the young reader. It is a healthy, clean story of the kind that boys love and with the right sort of ending.

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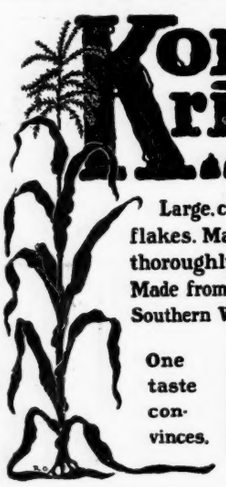

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By

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Author of "The Visits of Elizabeth"

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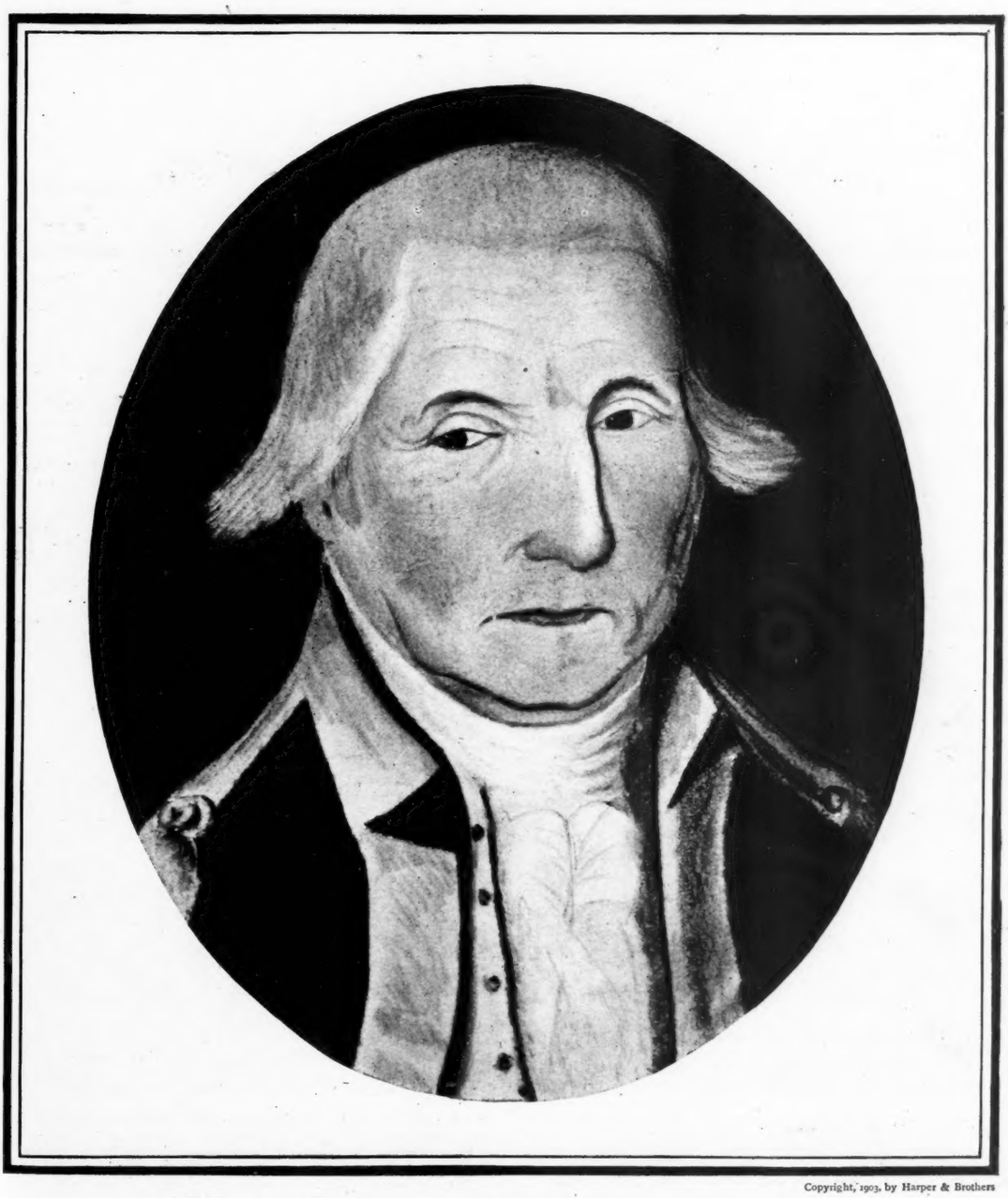

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GEORGE WASHINGTON

From a hitherto unpublished painting made by his physician, Dr. C. E. Dick, in 1799

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'ROUND-THE-WORLD TIME-TABLE

DIRECTOR NAGELMACKERS, a well-known railway official of Belgium, recently announced that within a year it would be possible to go around the world in forty days. This may be accomplished when the improvements in the Siberian railroad, which are being rushed by Russia, are completed, and a fast steamship service from Port Arthur or Vladivostok to Japan is in operation. The quickest available time at present is fifty-two days.

Herr Nagelmackers gave this schedule as one that might be made: Paris to Vladivostok, thirteen days; to Nagasaki, two days; to Yokohama, two days; to Vancouver, twelve days; to New York, four days; to Cherbourg, six days; to Paris, one-half day; total, thirty-nine and a half days. All this is predicated upon the theory that the traveller would have waiting for him at Vladivostok, Nagasaki, and New York the fastest steamships available.

The usual time from Moscow to the Pacific coast now is eighteen days, but it may be done more quickly. For example: Prince Komatsu, of Japan, by special arrangement with the Russian government, made the journey eastward on the railroad last year in thirteen and one-half days. This was equivalent to fifteen and one-half days from Paris. To reduce the time to thirteen days from Paris to the Pacific would seem to be entirely within bounds when the Siberian railroad improvements are finished. Four days is too small an allowance, with present accommodations, in which to reach Yokohama, the journey now occupying fully eight days. Twelve days to Vancouver is not unreasonable, and, indeed, it is probable that, with exceptional weather, it could be made in ten days. There is no immediate probability that the journey to New York from Vancouver could be made, except by special arrangement, in less than five days. The traveller would go by the Canadian Pacific to Moose Jaw, thence to St. Paul and Chicago, where a "flyer" could be taken for New York. From New York to Paris, six days and one-half is ample. To get from Port Arthur or Vladivostok to Yokohama in four days will be the greatest difficulty. With that arranged satisfactorily, and with steamships waiting, it would be possible for the traveller to keep within the forty days' schedule.

As the journey is made at present, one may start from Paris at 8.25 P.M., going by way of Berlin and Warsaw, and reach Moscow at 2.30 P.M. on the second day. Leaving Moscow at 9.35 P.M. the same night, if the departure from Paris is timed to catch the semi-weekly Siberian express, one reaches Irkoutsk eight days later. In Irkoutsk there is a wait of twenty-four hours, and then an eight days' trip to Port Arthur. Then one crosses the narrow channel to Che-fu, or one may take a steamer direct from Port Arthur. It is a five days' trip from there to Nagasaki, and four days more by steamer to Yokohama. Twelve days later one arrives in Vancouver, six days afterwards in New York, and in another six and a half, or say six, one reaches Paris—a total of fifty-two or fifty-two and one-half days. This is the shortest time in which it is possible to make the journey now, and that is conditional upon catching steamers at Port Arthur and Nagasaki without the slightest delay. It is altogether probable that, even with the closest figuring, there would be delays of from ten to twelve days in waiting for steamships, and therefore no one could really expect, except under extraordinary conditions, to make the journey in much less than sixty-five days.

Bird's-eye View of Shortest and most Direct Route around the World

It will probably be three years before the Siberian railroad is in a satisfactory condition. By that time the train equipment will be adequate to the demands made upon it, and the roadbed and bridges and tunnels will be all that could be expected. The railroad has already withstood the strain of transporting large military forces, and, as that is its chief object, it may be said, even now, to be a complete success. Then, if any traveller wishes to spend the money for special steamships and special trains, it will be entirely possible for him to go around the world in forty days or even a few hours less.

Drawn by George Gibbs

THE STRENUOUS LIFE IN THE WHITE HOUSE

At a White House reception the other day the President appeared with his arm bandaged, and it then developed that he and General Leonard Wood, during rainy days, were getting their exercise by having bouts at single-stick in the upper rooms of the Executive Mansion. In these days of vigorous Americanism it pleases the people to think that the head of the nation plays as hard as he works

STIFFENING THE LIBERALS

SCENE.—*A vault in the House of Commons, lighted by electric bulbs. The* Earl of Rosebery, Sir Henry Campbell-Bannerman, *and* Sir William Harcourt *are seated round a small table.*

Rosebery (sighing deeply). Woe is me . . . woe is me . . !

Harcourt (irritably). Oh, Rosey, shut up!

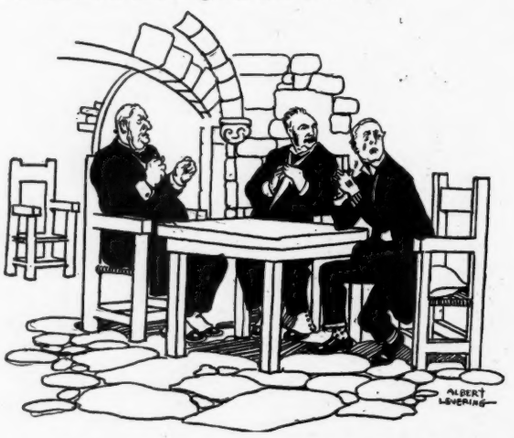
Campbell-Bannerman. If we could only think of something. . . .

Rosebery (dolefully). The world is out of joint! . . .

Harcourt. Rosey, you are a bird of ill omen. Brace up!

Rosebery (still more sadly). That's just it. If I only could.

Campbell-Bannerman (with an air of original discovery). If we could think of something, and stick to it. . . .



Harcourt. "Rosey, you are a bird of ill omen."

Harcourt. Why, you old owl, of course we can't. That's the devil. . . .

[*As* Sir William *pronounces the last word the shade of the late* Earl of Beaconsfield *begins to rise up slowly through the floor, in the traditional scarlet costume of Mephistopheles.*

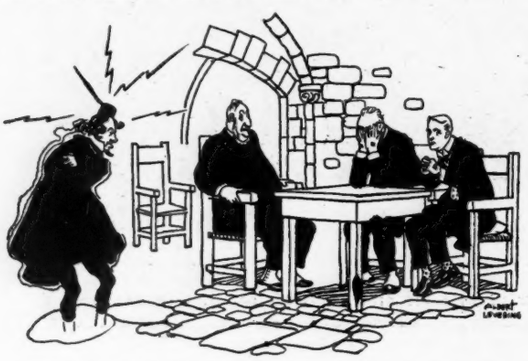
Beaconsfield (with great suavity). Pardon my appearing thus abruptly, though not unsummoned. Sir William, I think it was, my dear old parliamentary confrère Sir William, who mentioned our Chief . . . and as the Chief was busy, he was good enough to send me. . . . Pray, command me. . . .

Campbell-Bannerman (aside, to Rosebery). Ah, uncommonly like . . . ah . . . the late Lord Beaconsfield. . . .

Rosebery (wringing his hands). Angels and ministers of grace defend us! . . .

Harcourt. Thought I couldn't be mistaken. . . . Why, of course it's Dizzy. Uncommonly glad to see you, Dizzy. Quite like old times, eh? . . . [*Shakes hands warmly with the apparition.*

Beaconsfield (offers his hand to Campbell-Bannerman, *who takes it in a doubtful way, then to* Rosebery, *who hesitates, shakes his head, and finally gives his hand with impulsive warmth).* So pleased to shake hands with so distinguished a company. . . . And perhaps—I only say perhaps—before we part I may be of use to you. May I be so indiscreet as to ask why my old friend, my dear old friend, mentioned the Chief's name? . . .



The shade of Beaconsfield rises slowly through the floor

Harcourt (looks at the others, then at Beaconsfield*).* In confidence, of course? . . . In strictest confidence? . . .

Beaconsfield (stiffly). Was I in the habit of betraying confidences? [*Then, abruptly.*] Oh, bother dignity! . . . Let's be practical. . . . The fact is, I'm sick and tired of the Balfour gang, and want to try and give you boys a helping hand. . . .

Rosebery (doubtfully). If we could only be sure. . . .

Campbell-Bannerman (interrupting). The trouble is we don't seem to be able to agree on anything. . . .

Beaconsfield (with a manner of hard, practical sense). The real trouble is this: Rosebery has brains without nerve. Harcourt has nerve without brains. Sir Henry has neither. *(General consternation).* . . .

Harcourt. Look here. If you'll promise not to tell that to Chamberlain. . . .

Beaconsfield. Did I not promise confidence? Did I not say I was sick of them? Unscrupulous, yet not strong. Smart, yet without foresight. Pig-headed, yet not resolute. . . . My heavens! . . .

Harcourt (meaningly). Ahem!

Beaconsfield. What? Oh, certainly . . . the expression was inapt. . . . But you know what I mean. If you want a real policy. . . .

All together. Oh, above all things! . . .

Beaconsfield (with hard intellectual force). Then note everything the others do, and do the exact opposite. Lansdowne has mixed

Beaconsfield. "Principles? Did I say principles?"

you up with Germany against Russia. . . . Very good. . . . Take the side of Russia against Germany. . . .

Harcourt (astonished). Why, Dizzy, and the Berlin Treaty? . . . Your principles? . . .

Beaconsfield (in the same hard style). Principles? Did I say principles? . . . You are thinking of Gladstone. . . . Politics is not an affair of principles; it is an affair of fact. Was I not always with the facts? Go in with Russia. The day of Russia is coming. Drop Germany like a hot potato. And drop this Clericalism of Balfour's. . . . Get the brain of the snub-nosed Saxon stirred up. . . . Compel your people to learn . . . . give South Africa to the Hollanders—they will have it in any case . . . . and if you give it now, they will be eternally grateful . . . . find some way of pacifying Ireland . . . borrow their brains, instead of driving them abroad. Do this, and you carry all before you. . . .

Rosebery (sighing deeply). It sounds wise, if we could only. . . .

Beaconsfield (sharply). I was never accounted a fool. . . . I can give you a policy, but can you follow it? You play your cards so badly. . . *(Suddenly illumined.)* Why, that is it! You lack the training. Let us get our hands in at the great American game. . . .

Rosebery. The what? . . .

Campbell-Bannerman. Forming trusts? . . .

Harcourt. Why, no! Poker!

Beaconsfield. Dear old Harcourt. He always understands! Yes, poker, of course. . . .

Rosebery. I'm afraid I don't know what poker is. . . .

Campbell-Bannerman. I always forget the hands. . . .

Beaconsfield. Precisely. I see you need the training. Well, it grows late, and I have—ah—an appointment. Meet me again to-morrow, and we shall begin.

[*Disappears slowly through the floor.*

Drawn by Henry McCarter

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Inauguration of President Humphreys of Stevens Institute

WITH the inauguration of Alexander C. Humphreys, Stevens Institute of Technology enters upon a new era. The inaugural ceremonies were held in the Carnegie Laboratory of Engineering, at the Institute, and were followed by a dinner at Sherry's tendered to the President by the Alumni Association, at which representatives of leading universities and colleges and other prominent men were present. Among the inauguration speakers were President Charles F. Thwing, who spoke on behalf of the universities, and President Henry S. Pritchett, of the Massachusetts Institute of Technology, who spoke of the aims and achievements of schools of engineering. Mr. Andrew Carnegie paid a special tribute to the late President Morton, and contrasted the career of a financier with the "infinitely higher" one of an educator. The oath of office was administered by Chancellor Magie, following which the new president made an address outlining his future policy.

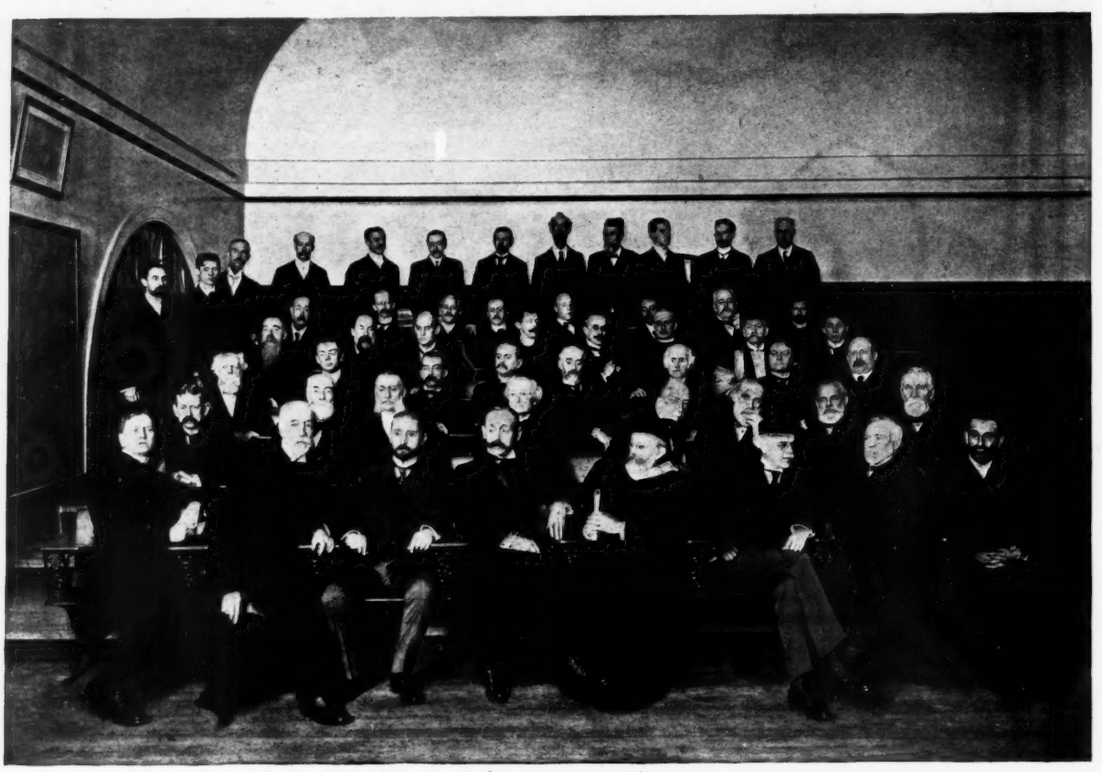
The increasing number of students at Stevens has necessitated some changes. While the original endowment, supplemented by the subsequent gifts of Dr. Morton and of the Stevens family, was ample for the number of students formerly accommodated, it is inadequate for the work that the Institute is now called upon to do. Mr. Carnegie's gift and endowment of a Laboratory of Engineering assisted much, but more and larger lecture rooms and laboratories are required. The Morton Chemical Laboratory will shortly be erected with funds subscribed by President Morton and the Alumni. Dormitories are to be built; funds for one have been subscribed, provided enough for the erection of two others shall be obtained. The removal of the Carnegie Laboratory apparatus from the main building set free the ground floor which is now being fitted up as a machine shop. The present machine shop will be converted into a much-needed auditorium.

At the dinner Professor Marburg announced that the University of Pennsylvania would shortly confer upon President Humphreys the degree of Doctor of Science. Among the speakers of the evening were the Hon. Franklin Murphy, Governor of New Jersey, Colonel E. A. Stevens, son of the founder, and the Right Rev. Frederick Burgess, Bishop of Long Island, and many prominent engineers and college representatives.

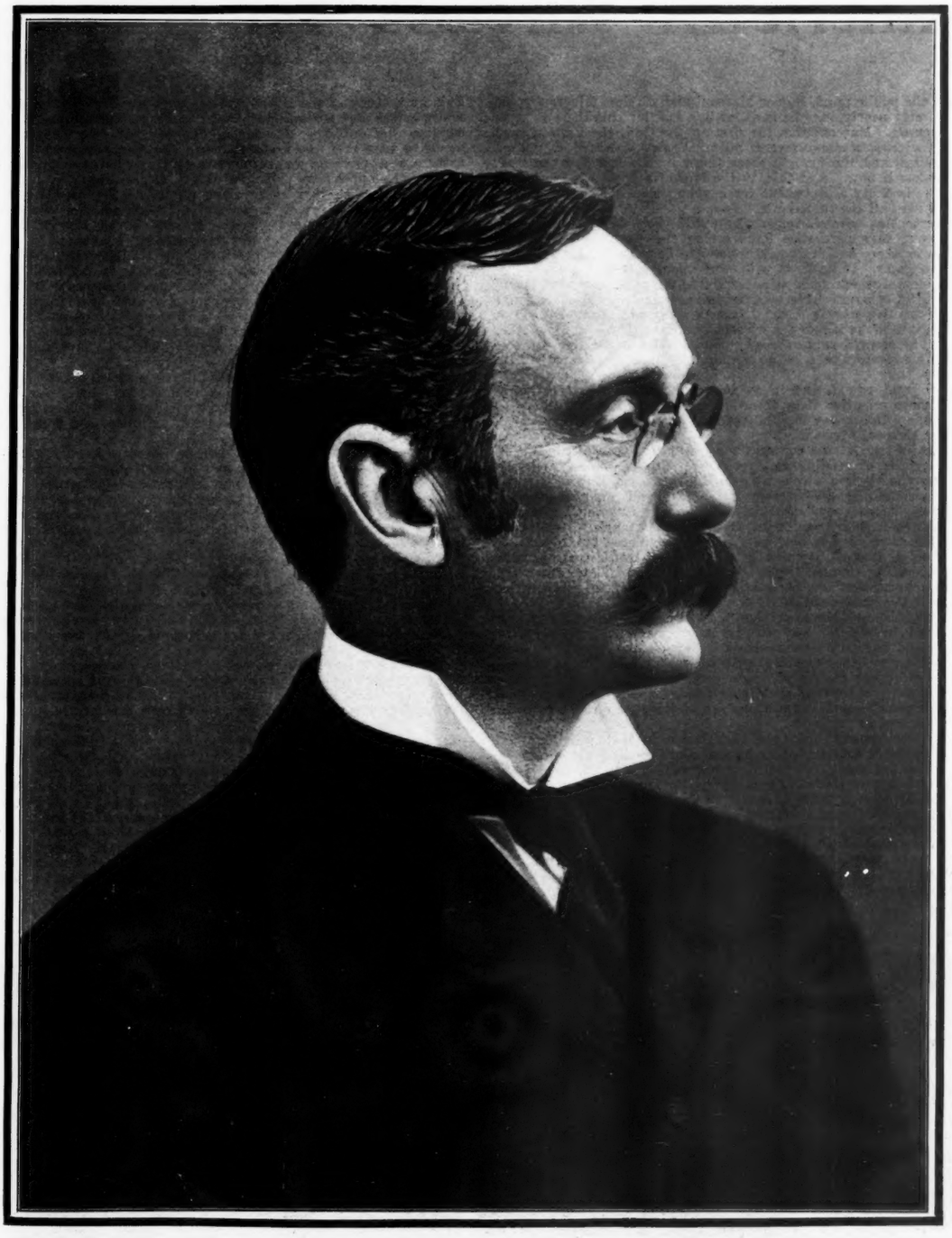
President Humphreys is a graduate of Stevens. While Superintendent of the Greenville Gaslight Company, of Bayonne, New Jersey, he was allowed to attend certain lectures and recitations at the Institute. His natural abilities and power for work were such that he graduated in four years, with great credit in the Class of 1881, which so impressed the faculty that they passed a special resolution expressing their esteem. He continued in the gas business after graduating, and was Superintendent of the United Gas Improvement Company, of Philadelphia, for ten years, in which position he did more than any other man to advance the practical and commercial state of the art. He finally established the firm of Humphreys & Glasgow, Gas Engineers, for the construction of water-gas apparatus in England, and for consultation business in America. In addition to this he has been successfully connected with many other enterprises. In accepting the presidency in response to the unanimous request of the Faculty, Board of Trustees and Alumni, Mr. Humphreys sacrificed much for the love of his Alma Mater and his interest in the development of young men.

Much has been done to improve the buildings and grounds at Stevens, one feature being the installation in the drawing-rooms of an electric-light system of special construction. A new and improved roster has been adopted, by which more time is allowed for athletics, and some improvements have been made in broadening the course.

The advent of a new President, with marked scientific and business ability and energy, who will carry out the ideas of his predecessor, and devote himself to the advancement of the Institute, is a source of much satisfaction to all who are interested in the best progress of technical education in this country.



Charles F. Thwing Chancellor MacCracken Henry S. Pritchett President Humphreys S. Bayard Tod Andrew Carnegie



ALEXANDER C. HUMPHREYS

Who has just been elected President of Stevens Institute

American Wireless Telegraphy

IN the public mind, Signor Marconi and wireless telegraphy are pretty nearly one; he is all of it. And for this there is some reason. Marconi was the first in the field, the first to send a wireless message several miles, the first to reach a hundred miles, and the first to cross the sea. He has had the lead, and he has it now. And this, in the face of a perfect host of competitors, is a big achievement for a young man still under thirty. He deserves all the fame he has won.

Nevertheless, wireless telegraphy would probably be about where it is now, save perchance for crossing the Atlantic, if Marconi had never been, and it is not impossible he may yet be beaten at his own game. If he is, it will come about in this way:

The device which made wireless signalling possible was the very well-known coherer. This was not in the remotest sense Marconi's invention. He merely took it, all ready made, and modified it in a way to make it much more sensitive. On this, and some other details, he secured rather broad patents. The alternative to other aspiring inventors was to go round the coherer, so to speak, or give up.

They went round, and in so doing discovered other devices so much more sensitive than the coherer that the latter was left in the shade. It has now been abandoned, for all long-distance work, and by Marconi himself.

What is true of the coherer is more or less true of all the various details of sending and receiving. For example, in the beginning the electric waves were produced with a Rubenkorff coil. This is essentially a laboratory instrument, and produces waves of enormous "frequency," that is, a million or two oscillations per second. Such high frequencies are not needed, and are ineffective. The induction coil has now been generally replaced by an ordinary alternating dynamo, coupled with a step-up transformer to raise the generating current to the required tension. These are everyday machines that can be bought anywhere. Signor Marconi has followed this procedure in his transatlantic work.

Again, the old Morse "inker," coupled with the coherer, and employed to register the wireless messages, was a very clumsy affair, and has now been replaced by an ordinary Bell telephone. So with many other technical points, such as using large "capacities"—electrical reservoirs, so to speak, to store large quantities of electricity where they could be suddenly loosed; the employment of the closed "tuned" circuit, instead of the open circuit, as in the old way, and so on.

Now the especial point of the matter is that practically all these improvements are of American invention, and are covered by American patents. And two big companies are in the field which will test Signor Marconi's right to employ the new methods. Forced to do new things, American inventors have found better ways; while Marconi, with splendid courage, has been tackling the long-distance problem, and brilliantly bridging the Atlantic, they have gone ahead more quietly and worked out systems which seem more practicable from a commercial point of view. The first of the American systems to achieve a practical success was that originated by Dr. Lee de Forest. He had taken his degree at Yale on a study of the Hertz waves, as the electric waves are generally called, and so came to wireless with a solid equipment. He employs the ordinary alternating dynamo and transformer, and seems to have been the first to do so. For the rest, his system is based on a receiver, or responder, as he calls it, working on exactly the opposition principle to the old coherer. It is a decoherer, and altogether an amazing affair. A very weak current is made to flow round a circuit and through the responder. When the Hertzian waves arrive they break this current. In a telephone introduced in the circuit, you hear a buzz, or rather a hum. The break is due to the formation of little air bubbles between the loose contacts of the responder. These air bubbles are instantly absorbed,—so rapidly in fact, that a succession of waves can be made to break the current a thousand or more times a minute. With the de Forest system it is possible to send as fast as in ordinary telegraphy—that is, fifty or sixty words a minute. The messages are taken by an operator listening in a telephone, just as if it were ordinary Morse telegraphy.

It is all so simple that it reads like a fairy tale. But it took a deal of patience and hard work to achieve; and there were weary days when no one could be found to invest a dollar; hospital days, too, when the money did come, and an over-keen young man worked himself to a breakdown.

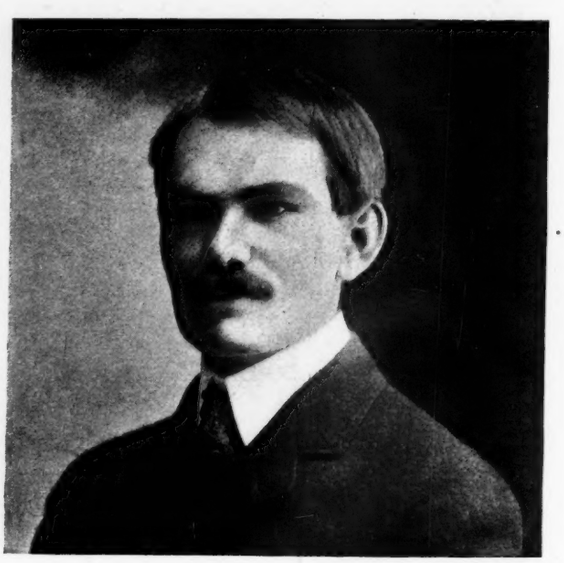
In recent competitive trials, the de Forest system appears to have won the government's favor, for both the War and Navy departments are equipping stations with its apparatus. It has been successfully employed between Washington and Annapolis—an overland test. Now it is making for the Pacific, and it may not be many months before we shall be in touch, by wireless, with our new possessions in the Philippines.

The second system of wholly American origin is that of Professor R. A. Fessenden, Professor of Electric Engineering in the Western University of Pennsylvania at Allegheny. These patents have only recently been taken out, although the first application dates from nearly four years ago. They cover a comprehensive plan, strikingly new in many details, and altogether the most up to date in the field.

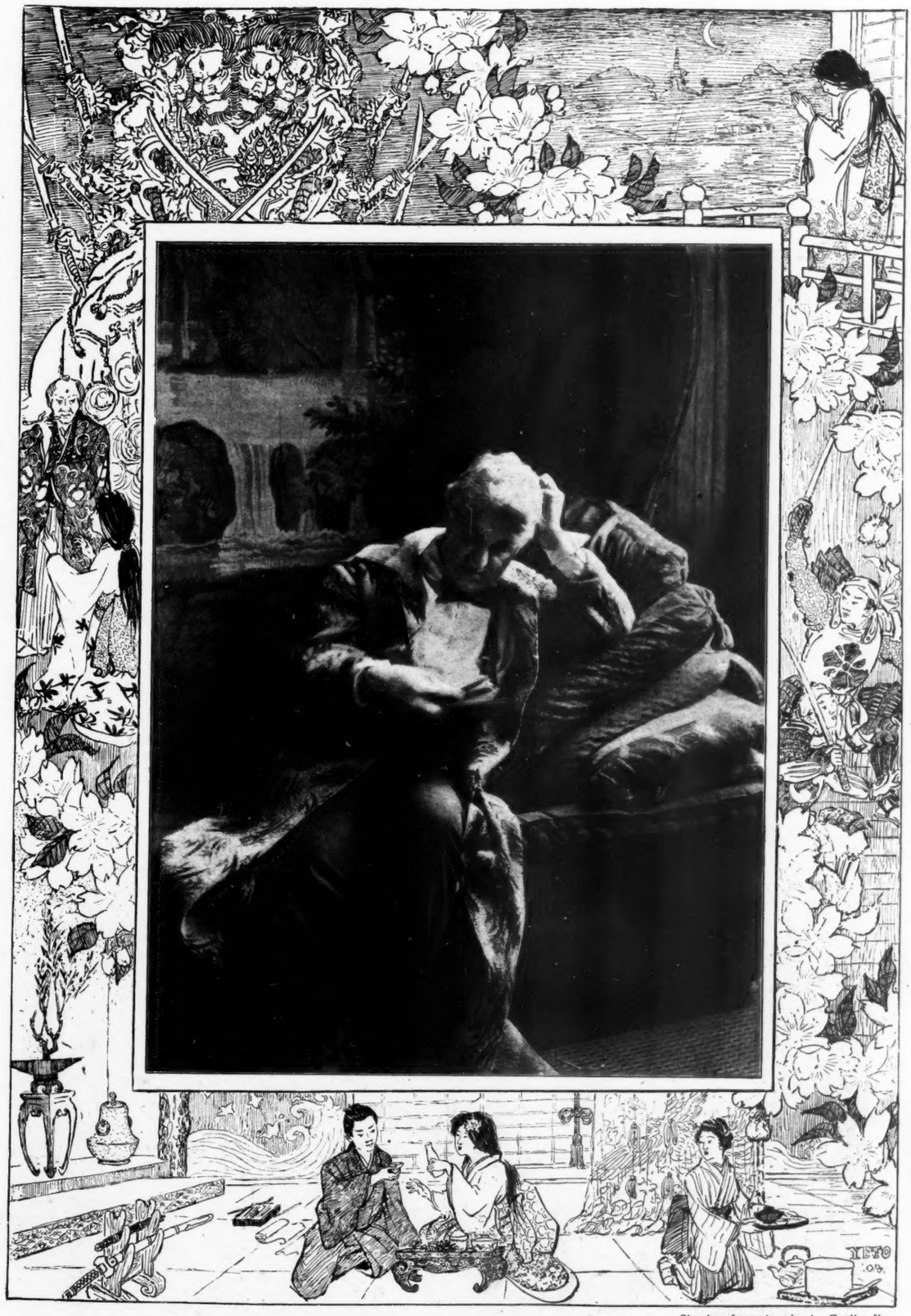
Professor Fessenden's receiver is neither a coherer nor a decoherer. The electric waves are merely made to heat a marvellously thin wire, through which a very weak electric current constantly flows. The effect of this heating is to vary the current and operate a telephone. It is a good deal on the principle of Professor Langley's bolometer, the tiny machine which will register the heat of a candle a mile and a half away. The heating surface, however, is reduced to a bit of wire 1-5000 of an inch thick. It is invisibly small, and is enclosed in a vacuum and a metal shell.

Professor Fessenden calculates that this receiver is about 40,000 times as sensitive as the best types of the coherer. He has operated over fifty miles with a spark 1-32 of an inch across, where it required a flash 5½ inches long to actuate a coherer over the same distance. Probably with a device like this, Signor Marconi would have had no need for the tremendous outpour of energy which he used in signalling across the Atlantic.

Professor R. A. Fessenden



Dr. Lee de Forest



Sketches from the play by Genjiro Yeto

DAVID BELASCO

Whose presentation of the Japanese play "The Darling of the Gods," this winter, has put him in the front rank of stage-managers in this country

A NIGHT AT THE METROPOLITAN CLUB AF

The Metropolitan Club in Washington, whose membership comprises army and navy officers, diplomats, and statesmen, is always an
uniforms of foreign nations sit about gossiping with our own army and navy genera

LUB AFTER A FUNCTION AT THE WHITE HOUSE

en, is always an interesting spot in the capital, but never more so than after some official reception at the White House. Men in the ornate and navy generals in their full-dress uniforms, giving the rooms the color of a European court